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EDITORIAL ANALYSIS

How Electricity Trading Happens in India — And Why a Restructuring Is on the Cards

INDIAN EXPRESS

23 April 2026 · ECONOMY · GS3

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The Indian Express 23 April 2026 GS3

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INTERVIEW ANGLE

"CERC's market coupling proposal would end IEX's 90% dominance of India's power exchange market. Is this good regulation or stifling competition? What does it mean for electricity consumers and India's energy transition?"

THE CORE ARGUMENT

India's short-term electricity market has grown nearly 4x in 15 years — from 65.90 BU (2009-10) to 238.35 BU (2024-25) — but is dominated by a single exchange (IEX: 90%+ share). The CERC's market coupling proposal is designed to create a **level playing field** by pooling all exchange bids into a single price discovery mechanism, preventing regulatory arbitrage and improving market efficiency. The editorial supports this structural reform but cautions that implementation complexity and IEX's justified objections (network effects, data systems) require a phased rollout.

INDIA'S ELECTRICITY MARKET ARCHITECTURE

How Electricity Reaches Consumers

India's power sector operates across three layers:

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Generators (Coal, Nuclear, Hydro, Solar, Wind)
          ↓
Transmission (PGCIL — Power Grid Corporation of India)
          ↓
Distribution (DISCOMs — State Electricity Distribution Companies)
          ↓
Consumers (Industrial, Commercial, Residential)
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The Short-Term Market — Where Power Exchanges Operate

Long-term contracts (PPAs — Power Purchase Agreements) cover ~80% of India's electricity. The **short-term market** covers the remaining ~20% — balancing supply-demand gaps in real time.

MARKET TYPE	WHO BUYS	WHO SELLS	TIMEFRAME
Day-Ahead Market (DAM)	DISCOMs, open access consumers	IPPs, state generators	1 day ahead
Real-Time Market (RTM)	Deficit DISCOMs	Surplus generators	Within 30 minutes
Term-Ahead Market	DISCOMs, C&I consumers	Generators	Up to 11 days
Green DAM	Obligated buyers (RPO)	Renewable generators	Next day

POWER EXCHANGES — THE CURRENT SYSTEM

Three Exchanges, One Dominant Player

EXCHANGE	FULL NAME	ESTABLISHED	MARKET SHARE (DAM)
IEX	Indian Energy Exchange	2008	~90%+
PXIL	Power Exchange India Ltd	2008	~8-9%
HPX	Hindustan Power Exchange	2022	~1-2%

Why IEX dominates:

- First mover advantage (est. 2008)
- Deepest liquidity — buyers and sellers naturally prefer the most liquid market
- Better technology platform
- "Winner takes all" dynamic: more participants → more liquidity → even more participants

The problem with dominance:

- IEX can potentially set prices to its advantage
- Price differences between exchanges (arbitrage) create inefficiency
- Smaller exchanges cannot compete — reducing competitive pressure on IEX

MARKET COUPLING — THE PROPOSED REFORM

How Market Coupling Works

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Before market coupling:
IEX: Clearing Price = ₹4.5/unit (90% volume)
PXIL: Clearing Price = ₹4.8/unit (9% volume)
HPX: Clearing Price = ₹5.0/unit (1% volume)
→ Price differs by exchange; buyers/sellers on smaller exchanges get worse deals

After market coupling:
All bids pooled → Grid India algorithm → Single MCP = ₹4.6/unit
→ Every transaction settles at ₹4.6/unit regardless of exchange
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Grid India as Market Coupling Operator

Grid India (formerly POSOCO — Power System Operation Corporation) runs the **National Load Despatch Centre (NLDC)** — the brain of India's grid. Its role as MCO:

- Collects bid data from all three exchanges
- Runs unified price discovery algorithm
- Sends clearing results back to each exchange for settlement
- Grid India is neutral — not a market participant itself

What Market Coupling Changes

DIMENSION	BEFORE	AFTER MARKET COUPLING
Price discovery	Fragmented (each exchange separately)	Unified (single MCP)
Liquidity	Concentrated at IEX	Shared across all exchanges
Arbitrage	Possible (price differences between exchanges)	Eliminated
Competition	IEX dominant	Level playing field
Consumer price	Potentially inflated if IEX over-concentrated	Better price signal

BROADER ENERGY MARKET CONTEXT

Why This Matters for India's Energy Transition

India's energy transition requires massive expansion of renewable energy. The electricity market architecture directly affects:

1. **Renewable energy integration:** Solar and wind are variable — short-term markets (RTM, DAM) are critical for balancing renewable surplus/deficit
2. **Green energy procurement:** Green DAM allows renewable buyers to purchase specifically green power
3. **Storage incentives:** Better price signals incentivise battery storage investment
4. **Discom financial health:** Better procurement prices reduce discom losses (currently ~₹1 lakh crore annually)

DISCOMS — India's Weakest Link

India's distribution companies (DISCOMs) are financially distressed:

INDICATOR	FIGURE
Aggregate technical and commercial (AT&C) losses	~15-18%
Aggregate discom debt	~₹6 lakh crore
Annual losses	~₹1 lakh crore

DISCOMs cross-subsidise agriculture and residential consumers through industrial tariffs — creating distorted price signals. Market coupling improves wholesale price efficiency but does not fix discom structural problems.

UPSC ANGLE

PAPER	ANGLE
GS3 — Economy	Power market, CERC, electricity trading, discom finances
GS3 — Energy	Renewable integration, power exchange, energy transition
GS2 — Governance	CERC, Grid India, electricity regulation

Mains Keywords: CERC, Market Coupling, IEX, PXIL, Grid India, POSOCO, Day-Ahead Market, Real-Time Market, DISCOM, AT&C losses, renewable energy integration, Electricity Act 2003

Probable Question: "India's electricity market design must evolve to support both competitive pricing and renewable integration. Critically examine the CERC market coupling proposal." (GS3 Mains)

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